



THE  
ONTARIO WATER RESOURCES  
COMMISSION  
  
WATER POLLUTION SURVEY  
  
TOWNSHIP OF HURON  
and  
VILLAGE OF RIPLEY  
  
COUNTY OF BRUCE

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R E P O R T

on

WATER POLLUTION SURVEY

of the

TOWNSHIP OF HURON

and

VILLAGE OF RIPLEY

COUNTY OF BRUCE

Date of Sampling: - August 1964

Division of Sanitary Engineering



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R E P O R T

ONTARIO WATER RESOURCES COMMISSION

A water pollution survey of the Township of Huron and the Village of Ripley was carried out on August 19 and 20, 1964. The purpose of such a survey was to determine the nature and extent of sources of industrial and domestic pollution within the municipalities. Surveys of this nature are conducted routinely and upon request throughout the province by the Commission.

I GENERAL

The Township of Huron is situated in the south-west corner of the County of Bruce and is bordered on the south by Highway 86 and on the west by Lake Huron.

A number of lesser watercourses have their origin within the township and two of these - the Pine River and Clark Creek empty into Lake Huron at points in the municipality.

The population of the township, as listed in the 1964 Municipal Directory is 3291, the majority being rural. Only one incorporated municipality namely the Village of Ripley, with a population of 450, is located within the township. There are eight small hamlets or settlements as follows.

Amberley, Purple Grove, Clarks Church, Pine River, Verdun,  
Reid Corner, Lurgan and Clark Point.

The latter two are largely summer resort settlements.

Until recently, the township has been largely dependent on agricultural land use for its economy. However, recent years have seen the rapid development of numerous cottage settlements on the approximately ten miles of shoreline on Lake Huron. One-sixth of the township's present assessment of \$3,500,000 is now represented by cottage properties. The village on the other hand, is a commercial or retail centre for surrounding farm properties.

There are no major industries in the township or in the village.

## II WATER USES

### 1. Municipal Water Systems

The Village of Ripley has the only municipal water supply in the township. Water is secured by means of a 268 feet deep drilled well and pump with a capacity of 240 IGM. A 15,000 gallon underground reservoir is equipped with an electric supply pump of 200 IGM capacity and a gasoline powered standby pump capable of delivering 150 IGM. The distribution system reaches 160 services. There is no treatment of the water supply and no problems with water quality have been experienced in the past five years.

### 2. Private Water Systems

The development of cottage communities at Bruce Beach, Poplar Beach, Lurgan and Point Clark on Lake Huron has resulted in the establishment of a number of small water works. Records available from

the Bruce County Health Unit indicate the existence of approximately 30 water supply systems serving a total of nearly 300 cottages. The majority of the systems are privately owned, untreated well supplies.

The Commission makes every effort to conduct at least one inspection per year on any water supply system having more than five services and such systems require OWRC approval. Unfortunately, the rapid development of the area and the difficulty in maintaining up-to-date records on the existing systems make annual inspections difficult. The Bruce County Health Unit, however, carries out a routine monthly sampling programme and sample results for the past two years indicate no major problems with water quality.

#### 4. Recreational Uses

None of the watercourses which traverse the township are of sufficient size to support boating, swimming or fishing under normal conditions. The ten miles of Lake Huron shoreline, however, are very popular for swimming, and small boat usage at Clark Point and the several beach areas is extensive.

### III WATER POLLUTION

#### 1. Sanitary Waste Disposal

##### (a) Existing Conditions

The Village of Ripley, being the major concentration of population is the only area in which disposal of sanitary wastes is a significant problem.

The village has no sanitary sewage works and individual septic tanks and cesspools generally serve this function. There are a number of storm sewers serving a portion of the village. Two storm drains discharge to open ditches at the south and west limits of the municipality. The latter drain was found to be discharging domestic sewage with a flow of approximately 100 gallons per hour into an open ditch. These wastes flow through open ditch and culvert a distance of 1,000 yards to a small tributary of the South Pine River. Observations reveal that absorption by the soil results in very little of the wastes actually reaching the river. A sample of the wastes entering the ditch was secured for laboratory analyses and the results of these analyses are discussed in a subsequent portion of this report. The drain in the south-end of the village discharges a smaller volume of wastes (50 gallons per hour) and these too, are largely absorbed by the soil between the point of discharge and the river.

As will be noted later, the results of laboratory analyses on samples of effluent indicate that domestic sewage is reaching the storm drainage system.

None of the other communities in the township are of sufficient size to present any problem of pollution as a result of domestic or industrial wastes.

(a) Proposed Sewage Works

In 1961, the council of the Village of Ripley received a



report from R. M. Dawson, Consulting Engineer, recommending sanitary sewers, a pumping station, forcemain and lagoon. No action has been taken on the report and the council has no plans at present for any improvements to the existing conditions.

## 2. Refuse Disposal

There are four recognized refuse disposal locations in the township - one of which serves the Village of Ripley exclusively. None of the sites are located adjacent to any watercourses.

Regular pick-up at 70% of the lakefront cottages and in Ripley ensures that indiscriminate dumping in ditches and river beds does not present a problem.

## 3. Industrial Waste Disposal

While there are no major industries in the township, the Pine River Cheese and Butter Co-operative plant does present a minor problem with respect to pollution.

The plant, located on the South Pine River just west of Highway 21, employs a spray irrigation system for the disposal of milk wastes, during the warmer months of the year. However, domestic wastes reach the river directly from a septic tank overflow and milk wastes are discharged to the river during the winter months. Efforts must be made to ensure that the discharge of any polluting wastes is prevented wherever possible.

#### 4. Discussion of Sample Analyses

The results of laboratory analyses on samples of effluent from two drain outlets at the Village of Ripley are as follows.

<u>Location</u>	<u>5-Day BOD</u>	<u>Total Solids</u>	<u>Susp. Solids</u>	<u>Coliform Count per 100 ml</u>
W. of Village	18	678	15	2,300,000
S. of Village	22	634	16	320,000

It should be noted that due to the lack of any measureable flow in any of the natural watercourses, a sampling programme on these was not felt to be of value in assessing the overall extent of water pollution.

The 5-Day BOD (Biochemical Oxygen Demand) is an indication of the amount of oxygen required for the stabilization of decomposable organic matter present in the water. Waste discharges whose BOD exceeds 15 ppm are not considered acceptable by the OWRC.

The M.F. Coliform Count reflects the extent of pollution by coliform organisms. These organisms are normally found in the intestines of man and other animals. The Commission's objective for any watercourse is a coliform count not in excess of 2,400 per 100 ml.

The results as reported indicate that the storm drains from the Village of Ripley are receiving domestic sewage which is being discharged to ditches draining to the Pine River. At times of heavy flow and in rainy periods, these wastes could cause pollution of the river.

#### IV SUMMARY AND CONCLUSIONS

A water pollution survey was carried out in the Township of

Huron and the Village of Ripley on August 19, 20, 1964. Domestic sewage discharges from Ripley and domestic and industrial wastes from the Pine River Cheese and Butter Co-operative periodically result in pollution of the South Pine River.

V RECOMMENDATIONS

It is recommended that:

A. The council of the Village of Ripley be requested to terminate domestic sewage discharges to the local storm sewer system and/or give consideration to the consulting engineer's report presented in 1961.

B. The Pine River Cheese and Butter Co-operative take steps to prevent the discharge of domestic and industrial wastes to the Pine River.

All of which is respectfully submitted

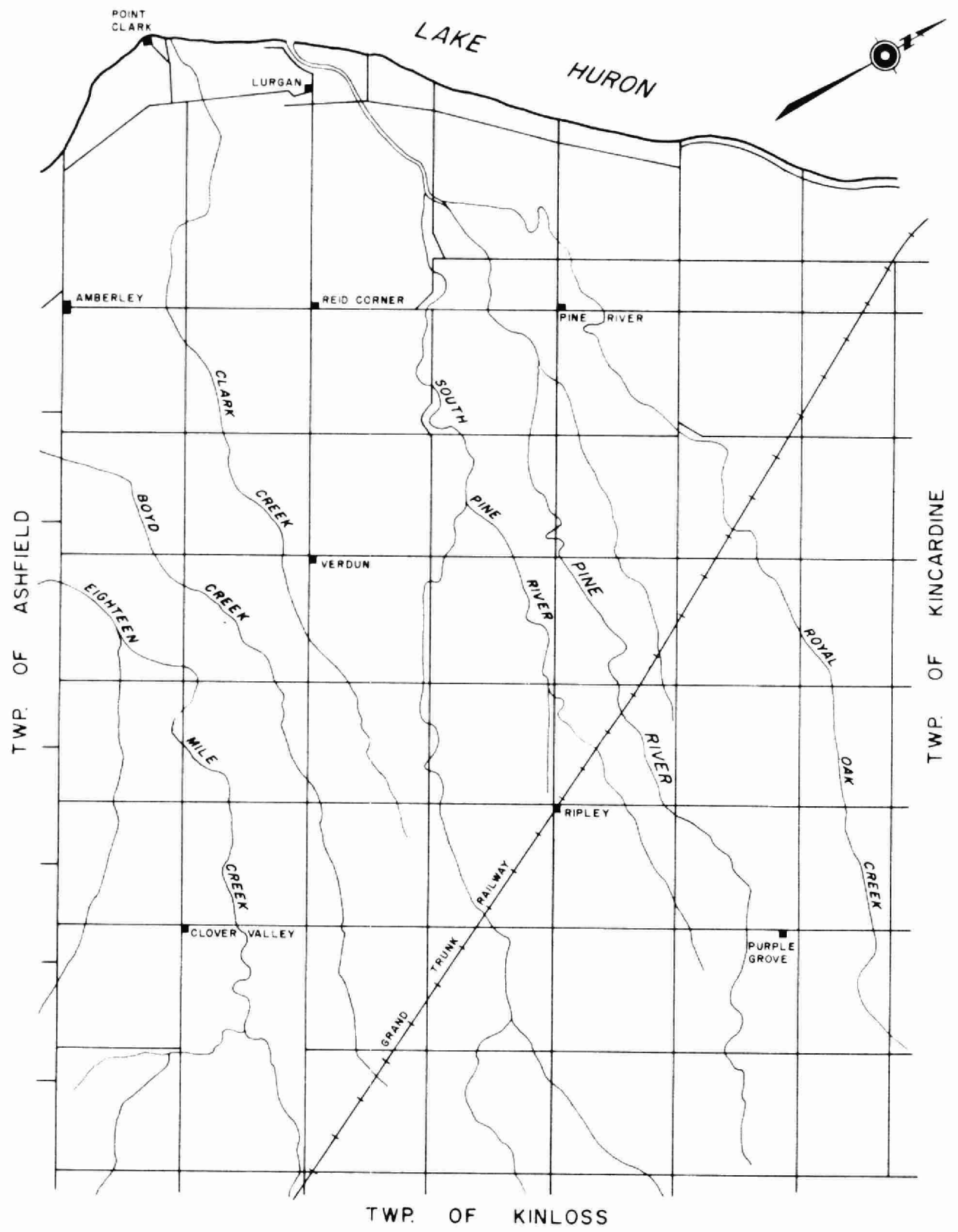
District Engineer

A. B. Redekopp  
A. B. Redekopp per YHM

Approved by

K. H. Sharpe  
K. H. Sharpe, Director

/ct



ONTARIO WATER RESOURCES COMMISSION

TOWNSHIP OF HURON  
COUNTY OF BRUCE

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